

Dec. 3. 2003 2:44PM FRISHAUF & PARTNERS

No. 5206 P. 2/15  
From: CHICK

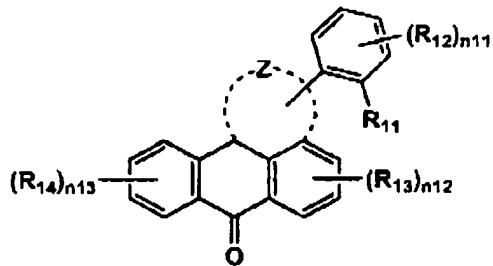
Appl. No. 10/717,141  
Filed November 19, 2003

This listing of claims will replace all prior versions, and  
listings, of claims in the application.

Listing of Claims:

1. (Original) A dye represented by the following formula  
(1) :

formula (1)



wherein Z is an atomic group necessary to form a 6-membered nitrogen containing aromatic ring; R<sub>11</sub> is a hydrogen bonding group; R<sub>12</sub>, R<sub>13</sub> and R<sub>14</sub> are independently a hydrogen atom or a substituent; n11 and n13 are each an integer of 1 to 4; n12 is an integer of 1 to 3.

Dec. 3. 2003 2:44PM FRISHAUF & PARTNERS

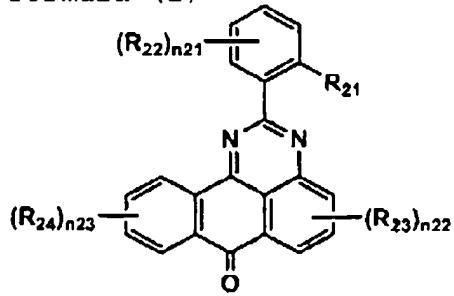
No. 5206 P. 3/15  
From:CHICK

Appl. No. 10/717,141  
Filed November 19, 2003

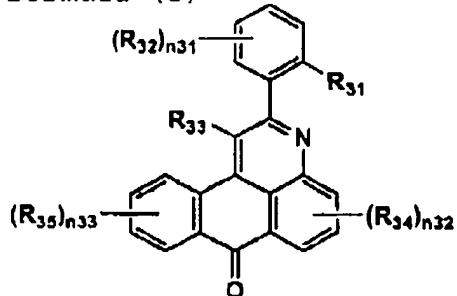
2. (Original) The dye of claim 1, wherein the dye represented by formula (1) is a dye represented by the following formula (2), (3), (4), (5), (6) or (7):

Appl. No. 10/717,141  
Filed November 19, 2003

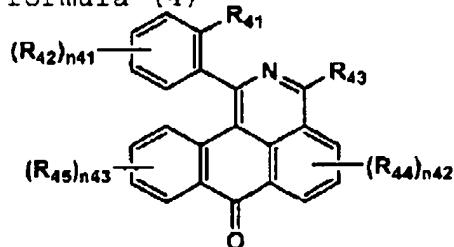
formula (2)



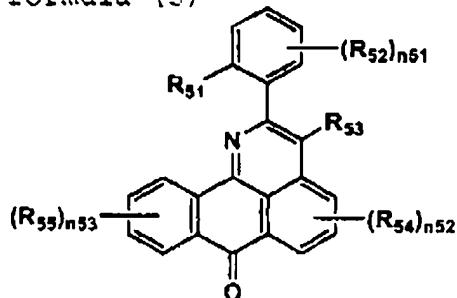
formula (3)



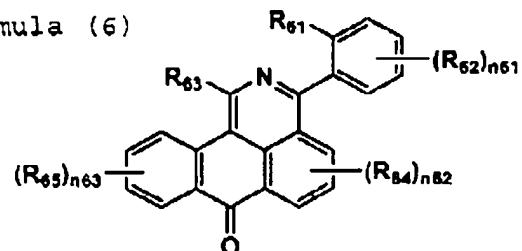
formula (4)



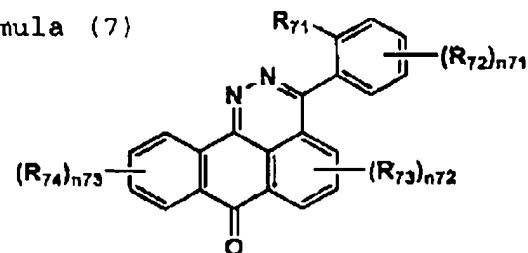
formula (5)



formula (6)



formula (7)



Dec. 3. 2003 2:45PM FRISHAUF & PARTNERS

No. 5206 P. 5/15  
From:CHICK

Appl. No. 10/717,141  
Filed November 19, 2003

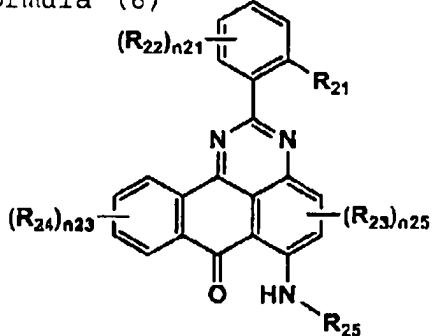
wherein  $R_{21}$ ,  $R_{31}$ ,  $R_{41}$ ,  $R_{51}$ ,  $R_{61}$  and  $R_{71}$  are each a hydrogen bonding atom;  $R_{22}$ ,  $R_{23}$ ,  $R_{24}$ ,  $R_{32}$ ,  $R_{33}$ ,  $R_{34}$ ,  $R_{15}$ ,  $R_{42}$ ,  $R_{51}$ ,  $R_{64}$ ,  $R_{45}$ ,  $R_{52}$ ,  $R_{53}$ ,  $R_{54}$ ,  $R_{55}$ ,  $R_{62}$ ,  $R_{63}$ ,  $R_{64}$ ,  $R_{65}$ ,  $R_{72}$ ,  $R_{73}$ , and  $R_{74}$  are independently a hydrogen atom or a substituent;  $n_{21}$ ,  $n_{23}$ ,  $n_{31}$ ,  $n_{33}$ ,  $n_{41}$ ,  $n_{43}$ ,  $n_{51}$ ,  $n_{53}$ ,  $n_{61}$ ,  $n_{63}$ ,  $n_{71}$  and  $n_{73}$  are each an integer of 1 to 4;  $n_{22}$ ,  $n_{32}$ ,  $n_{42}$ ,  $n_{52}$ ,  $n_{62}$  and  $n_{72}$  are each an integer of 1 to 3.

3. (Original) The dye of claim 2, wherein the dye represented by formula (1) is a dye represented by formula (2) or (3).

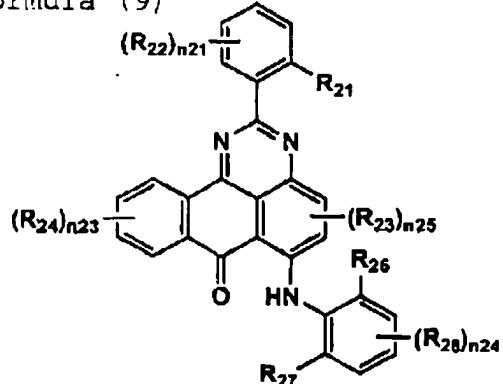
4. (Original) The dye of claim 3, wherein the dye represented by formula (2) is a dye represented by the following formulas (8) or (9), and the dye represented by formula (3) is a dye represented by the following formulas (10) or (11):

Appl. No. 10/717,141  
Filed November 19, 2003

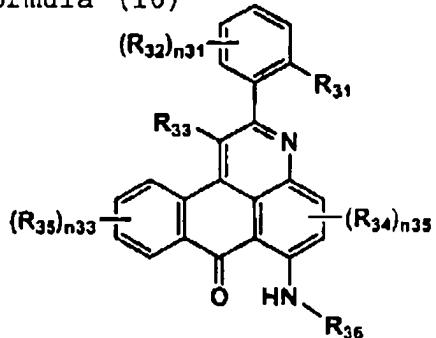
formula (8)



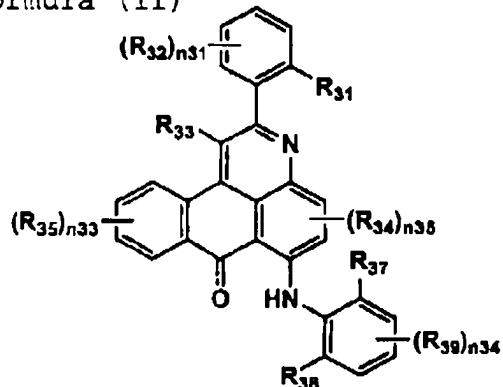
formula (9)



formula (10)



formula (11)

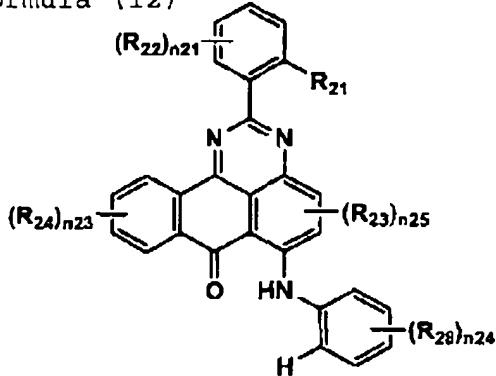


Appl. No. 10/717,141  
Filed November 19, 2003

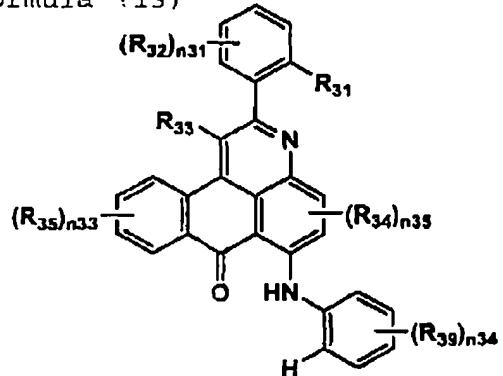
wherein  $R_{21}$  and  $R_{31}$  are independently a hydrogen bonding group;  $R_{22}$ ,  $R_{23}$ ,  $R_{24}$ ,  $R_{28}$ ,  $R_{32}$ ,  $R_{33}$ ,  $R_{34}$  and  $R_{35}$  are independently a hydrogen atom or a substituent;  $R_{26}$ ,  $R_{27}$ ,  $R_{36}$  and  $R_{37}$  are independently a substituent;  $n_{21}$ ,  $n_{23}$ ,  $n_{31}$ , and  $n_{33}$  are each an integer of 1 to 4;  $n_{24}$  and  $n_{34}$  are each an integer of 1 to 3;  $n_{25}$  and  $n_{35}$  are each an integer of 1 or 2;  $R_{25}$  and  $R_{35}$  are independently a group having a Hammett substituent constant ( $\sigma_p$ ) of 0.3 to 1.0.

5. (Original) The dye of claim 3, wherein the dye represented by formula (2) is a dye represented by the following formula (12), and the dye represented by formula (3) is a dye represented by the following formula (13):

formula (12)



formula (13)



Dec. 3. 2003 2:45PM FRISHAUF & PARTNERS

No. 5206 P. 8/15  
From:CHICK

Appl. No. 10/717,141  
Filed November 19, 2003

wherein R<sub>21</sub> and R<sub>31</sub> are independently a hydrogen bonding group; R<sub>22</sub>, R<sub>23</sub>, R<sub>24</sub>, R<sub>25</sub>, R<sub>32</sub>, R<sub>33</sub>, R<sub>14</sub>, R<sub>35</sub> and R<sub>39</sub> are independently a hydrogen atom or a substituent; n<sub>21</sub>, n<sub>23</sub>, n<sub>24</sub>, n<sub>31</sub>, n<sub>33</sub>, and n<sub>34</sub> are each an integer of 1 to 4; n<sub>25</sub> and n<sub>35</sub> is an integer of 1 or 2.

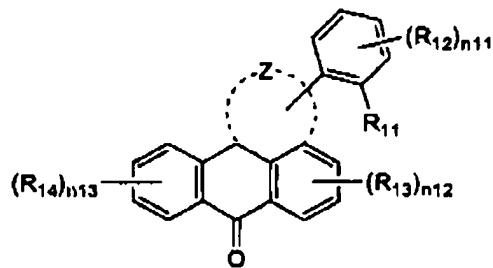
6. (Currently Amended) An ink for ink jet printing comprising a dye represented by the following formula (1) and a solvent:

Dec. 3. 2003 2:45PM FRISHAUF & PARTNERS

No. 5206 P. 9/15  
From:CHICK

Appl. No. 10/717,141  
Filed November 19, 2003

formula (1)



wherein Z is an atomic group necessary to form a 6-membered nitrogen containing aromatic ring;  $R_{11}$  is a hydrogen bonding group;  $R_{12}$ ,  $R_{13}$  and  $R_{14}$  are independently a hydrogen atom or a substituent;  $n11$  and  $n13$  are each an integer of 1 to 4;  $n12$  is an integer of 1 to 3.

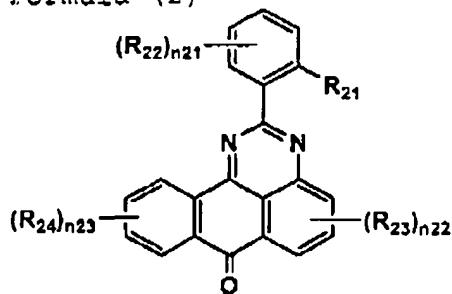
7. (Original) The ink of claim 6, wherein the dye represented by formula (1) is a dye represented by the following formula (2), (3), (4), (5), (6) or (7):

Dec. 3. 2003 2:45PM FRISHAUF & PARTNERS

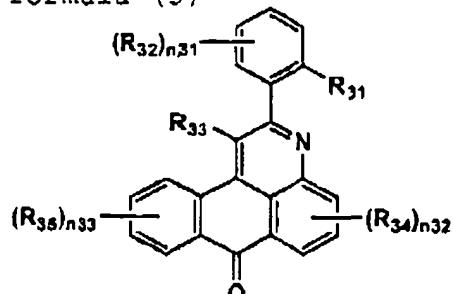
No. 5206 P. 10/15  
From:CHICK

Appl. No. 10/717,141  
Filed November 19, 2003

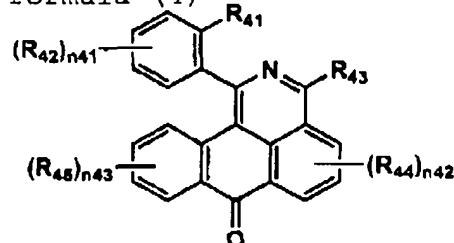
formula (2)



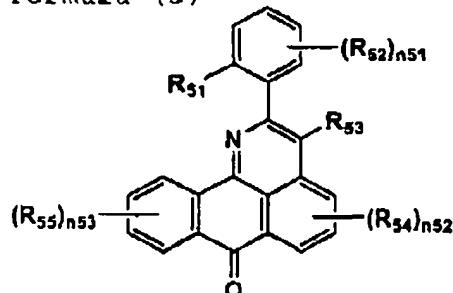
formula (3)



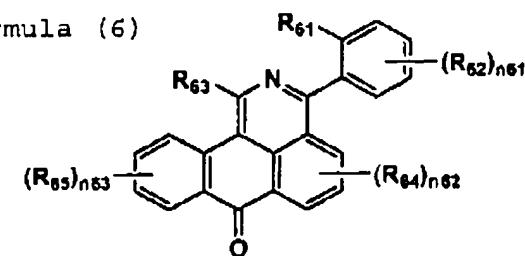
formula (4)



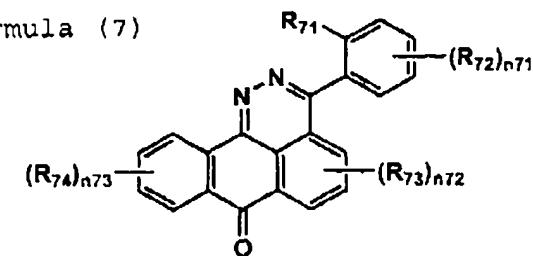
formula (5)



formula (6)



formula (7)



Dec. 3. 2003 2:45PM FRISHAUF & PARTNERS

No. 5206 P. 11/15  
From:CHICK

Appl. No. 10/717,141  
Filed November 19, 2003

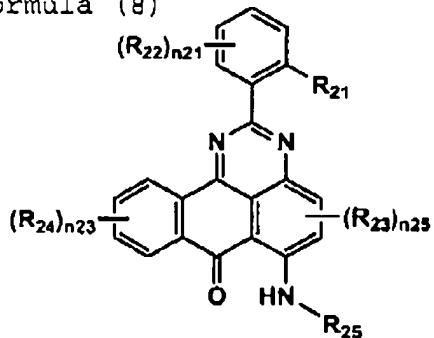
wherein  $R_{21}$ ,  $R_{31}$ ,  $R_{41}$ ,  $R_{51}$ ,  $R_{61}$  and  $R_{71}$  are each a hydrogen bonding atom;  $R_{22}$ ,  $R_{23}$ ,  $R_{24}$ ,  $R_{32}$ ,  $R_{33}$ ,  $R_{34}$ ,  $R_{35}$ ,  $R_{42}$ ,  $R_{43}$ ,  $R_{44}$ ,  $R_{45}$ ,  $R_{52}$ ,  $R_{53}$ ,  $R_{54}$ ,  $R_{55}$ ,  $R_{62}$ ,  $R_{63}$ ,  $R_{64}$ ,  $R_{65}$ ,  $R_{72}$ ,  $R_{73}$ , and  $R_{74}$  are independently a hydrogen atom or a substituent;  $n_{21}$ ,  $n_{23}$ ,  $n_{31}$ ,  $n_{33}$ ,  $n_{41}$ ,  $n_{43}$ ,  $n_{51}$ ,  $n_{53}$ ,  $n_{61}$ ,  $n_{63}$ ,  $n_{71}$  and  $n_{73}$  are each an integer of 1 to 4;  $n_{22}$ ,  $n_{32}$ ,  $n_{42}$ ,  $n_{52}$ ,  $n_{62}$  and  $n_{72}$  are each an integer of 1 to 3.

8. (Original) The ink of claim 7, wherein the dye represented by formula (1) is a dye represented by formula (2) or (3).

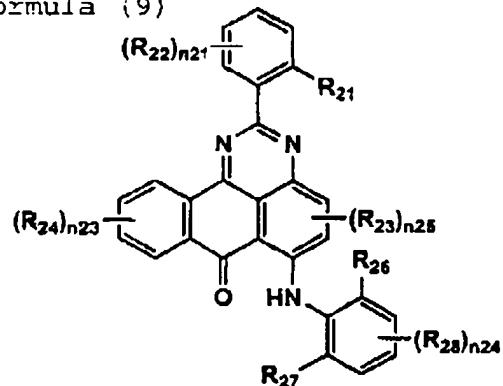
9. (Original) The ink of claim 8, wherein the dye represented by formula (2) is a dye represented by the following formulas (8) or (9), and the dye represented by formula (3) is a dye represented by the following formulas (10) or (11):

Appl. No. 10/717,141  
Filed November 19, 2003

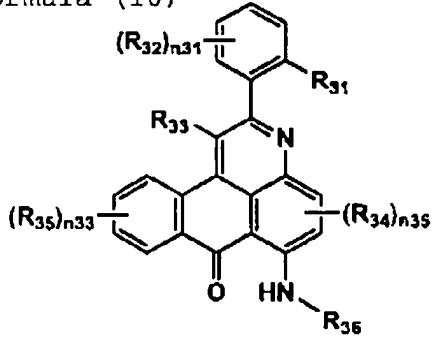
formula (8)



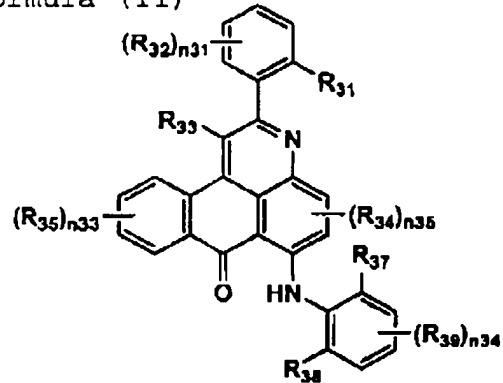
formula (9)



formula (10)



formula (11)

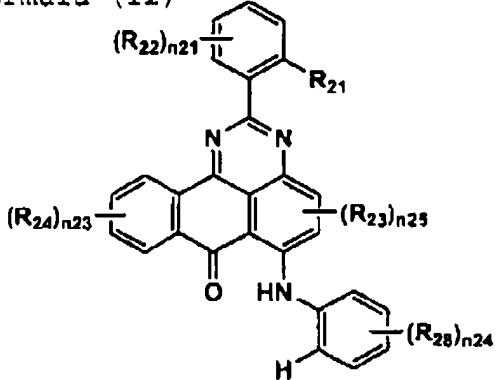


Appl. No. 10/717,141  
Filed November 19, 2003

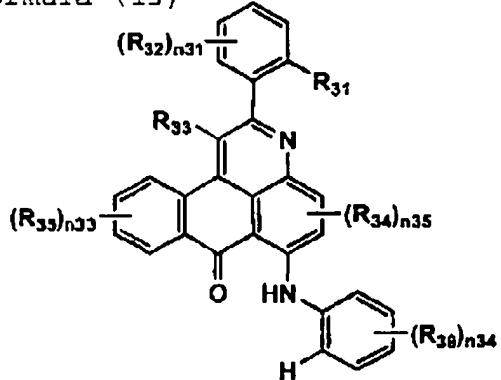
wherein R<sub>21</sub> and R<sub>31</sub> are independently a hydrogen bonding group; R<sub>22</sub>, R<sub>23</sub>, R<sub>24</sub>, R<sub>25</sub>, R<sub>32</sub>, R<sub>33</sub>, R<sub>34</sub>, R<sub>35</sub> and R<sub>36</sub> are independently a hydrogen atom or a substituent; R<sub>26</sub>, R<sub>27</sub>, R<sub>37</sub> and R<sub>38</sub> are independently a substituent; n<sub>21</sub>, n<sub>23</sub>, n<sub>31</sub>, and n<sub>33</sub> are each an integer of 1 to 4; n<sub>24</sub> and n<sub>34</sub> are each an integer of 1 to 3; n<sub>25</sub> and n<sub>35</sub> are each an integer of 1 or 2; R<sub>28</sub> and R<sub>36</sub> are independently a group having a Hammett substituent constant ( $\sigma_p$ ) of 0.3 to 1.0.

10. (Original) The ink of claim 8, wherein the dye represented by formula (2) is a dye represented by the following formula (12), and the dye represented by formula (3) is a dye represented by the following formula (13):

formula (12)



formula (13)



Appl. No. 10/717,141  
Filed November 19, 2003

wherein  $R_{21}$  and  $R_{31}$  are independently a hydrogen bonding group;  $R_{22}$ ,  $R_{23}$ ,  $R_{24}$ ,  $R_{28}$ ,  $R_{32}$ ,  $R_{33}$ ,  $R_{34}$ ,  $R_{35}$  and  $R_{19}$  are independently a hydrogen atom or a substituent;  $n_{21}$ ,  $n_{23}$ ,  $n_{24}$ ,  $n_{31}$ ,  $n_{33}$ , and  $n_{34}$  are each an integer of 1 to 4;  $n_{25}$  and  $n_{35}$  is an integer of 1 or 2.

11. (Original) The ink of claim 6, wherein in the compound represented by formula (1), the molecule contains at least one sulfonic acid group or at least one carboxyl group.

12. (Original) The ink of claim 6, wherein the ink comprises the dye in the form of fine particle dispersion.

13. (Original) The ink of claim 6, wherein the ink comprises the dye together with an oil-soluble polymer in the form of fine particle dispersion.